

Great ideas and tips from PBO readers

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Giving exhaust problems the elbow

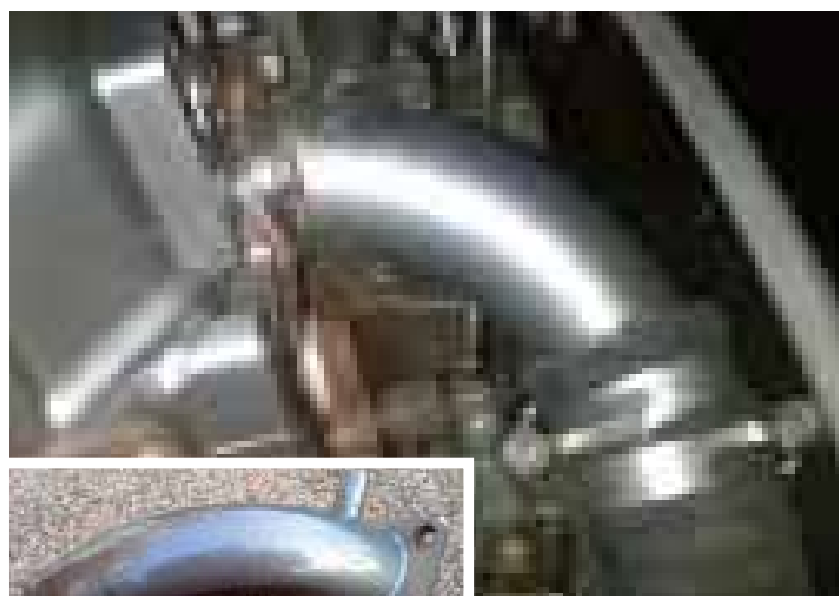
Ian Pirrie explains how to check the condition of the exhaust elbow on Yanmar GM engines

Yanmar GM engines are common and reliable, but one weakness on the raw-water-cooled version is the exhaust elbow, where seawater is forced into the elbow at the engine manifold.

Problems occur when hot exhaust gases are mixed with seawater: this is a very corrosive mixture. The elbow has a concentric tube welded inside the outer tube, which forms a water-cooled jacket around

the exhaust passage: this weld is very prone to failure.

Regular examination and replacement of the elbow is necessary to prevent major engine damage. Failure of the weld at the join of the inner and outer tubes can cause water to enter the engine through an open exhaust port and lead to hydro locking of the engine, which in turn can mean costly repair or replacement of the cylinder head and associated parts.



ABOVE A perfectly good-looking elbow on a Yanmar 2GM20. From the outside, there are no indications of any problems

LEFT A concentric tube (bottom) is welded inside the outer tube, and is very prone to failure

To inspect the elbow

- 1 Close off the raw water inlet seacock.
- 2 Undo the hose clip and remove the raw water feed at the exhaust elbow (thinner rubber tube on top).
- 3 Undo the two hose clips holding on the rubber exhaust hose and pull it from the elbow.
- 4 Undo the three bolts holding the elbow to the engine manifold.
- 5 Pull the elbow away from the engine.
- 6 Clean off all remnants of the old gasket. I used a 1in chisel to clean the manifold face.
- 7 Under good light, clean all carbon deposits from the welded area. Some holes may be obvious, which will mean replacement of the elbow is required.
- 8 If it looks ok, hold the elbow with the engine side pointing down and fill the space between the inner and outer tube with water. If everything is as it should be, no water will be running out.
- 9 Having a general poke around the welded area with a small screwdriver will reveal any loose rusty sections and, depending on condition, replacement may be necessary.



The new elbow was ordered online from the USA (www.exhaustelbow.com) and, including postage and customs, cost just less than half the price of the Yanmar part from a UK dealer. The new elbow, although not a Yanmar part, is made of stainless steel and looks and feels of very good quality



This is how the new exhaust elbow should look



The new elbow should be fitted to the engine with a new gasket, all hoses reattached and the hose clips done up. The engine should be run to check for water and exhaust leaks

Readers' Tips

DINGY DINGHY BLUES

There once was a beautiful, shiny white dinghy. We sailed her and rowed her and motored her happily. Then we towed her behind our bigger boat while on a week-long cruise. On the way back, we stowed her hull-side-up on deck for a longer passage. It was a beautiful sunny day. The next day, the dinghy had turned brown and yucky. We tried washing and scrubbing and all kinds of boat cleaners with no success.

But then I remembered the miracle home product in our kitchen cupboard, Bar Keepers Friend. It was developed in 1882 by an American chemist who noticed his pot was very shiny after cooking rhubarb: he formulated an ingredient in rhubarb into a talcum powder and sold it to taverns around the town.

It cleans and removes stains from



brass, stainless steel, copper, porcelain, ceramic and, yes, glassfibre – all without scratching, even though it is seemingly mildly abrasive. I marched outside with the powder and a wet sponge and wiped some of the powder into the dinghy's hull in a widening circle. It started to lighten, so I rubbed a bit and it became even cleaner.

Within minutes, the discolouration melted away without further effort. Less than an hour of scrubbing and rinsing later, the dinghy was as new.

Bar Keepers Friend is available throughout Britain and Ireland and costs about £2.79 for 250g. I like the powder better than the liquid, but both are invaluable around the house and aboard the boat.

Try it on your brass bell. www.barkeepersfriend.com/using-bar-keepers-friend

Daria Blackwell



One side done: less than 15 minutes' work

FIND THE SOURCE OF A DECK LEAK

However your decks are constructed, the water from a deck leak often emerges a considerable distance from where it enters. The point of emergence is usually very clear to see – or feel! However, finding its source can present quite a problem. In both cases I have experienced, the leaks were traced by the following method, which requires two people.

Attach the pipe from your dinghy inflation pump pipe to the point where the drip emerges. This can be done by sundry means such as duct tape, plasticine or some putty-like substance. Alternatively, connect a soft piece of hose to the inflation pipe and manually press the other end onto the leak. The connection doesn't have to be airtight, simply capable of providing some pressurisation. Wet the deck with soapy water, and start using the pump: bubbles will appear on deck at the leak's source. Repair as appropriate to the deck's construction.

Mark Grimwade



Your dinghy inflation pump can be used to trace the point of origin of deck leaks

GRATE PROP ANTIFOULING



This prop came off a friend's boat that had been in the water for four months, cruising the English Channel and Brittany. When it went in the water the clean and polished prop had been treated with Stovax Black Grate Polish. The result was not bad at all for a season which saw a lot of serious fouling, and the polish is super value at £4 for a 75ml tube.

Pat Manley